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ABSTRACT

Research on selected early childhood education program elements was reviewed to determine the effects of these elements on children's academic and social development. Four influencing factors concerning academic effects were investigated: (1) home intervention; (2) preschool intervention; (3) kindergarten programs; and (4) socioeconomic factors. Also studied were two outcomes related to social effects: strengths and weaknesses. A review of 38 studies suggested that home interventions were beneficial, effects of preschool participation were inconclusive, full-day kindergarten attendance produced academic gains, and socioeconomic status influenced the academic achievement of early childhood program participants. Even after participation in preschool programs, children of low socioeconomic status remained at risk. No single preschool curriculum model proved best in terms of promoting academic achievement. Preschool experience resulted in less need for special education placements and fewer retentions in grade. Preschool participants had fewer problem behaviors and kindergarten children improved in social behavior. In contrast, stress and aggression were identified as debilitating effects of early childhood program experience. Annotated citations of the research reviewed, definitions of terms, and recommendations are included. (RH)

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EARLY CHILDHOOD EDUCATION PROGRAMS: A REVIEW OF THE RESEARCH AND LITERATURE ON SELECTED FACTORS AND THEIR RESULTING EFFECTS ON ACADEMIC ACHIEVEMENT AND SOCIAL BEHAVIOR

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INTRODUCTION

The need for early childhood education programs has changed drastically in the United States over the last twenty years. What's more, the changes have been predicted to excel at even greater rates in the years to come. By 1990, Congress's Select Committee on Children and Families has placed the number of children under age six at approximately 23 million, an increase of over 3.4 million (McCormick, 1986). Another statistic provided by McCormick was that "nine out of ten mothers - married or single - will be in the work force by 1990" (30). These trends demonstrated the real need for increased quality care programs.

What these programs should accomplish and who would benefit most from participation were two issues upon which there was disagreement. Most felt that low socioeconomic children would make vast strides from program enrollment (Darlington et al., 1980; Gray and Klaus, 1970; Lazar, 1983). Others were not as convinced and the question of middle-class gains was also an enigma (Hebbeler, 1985; Pinkett, 1985). Some felt that the positive gains made by these children were a step in the right direction, but as Caruso and Detterman suggested, "how can such positive effects be obtained consistently?" (Caruso and Detterman, 1981:186). That was what high-quality programs should strive to achieve.

As Schweinhart et al. stated, "the obvious advantage of early intervention is that problems can be prevented or kept to a minimum if an effective treatment is employed" (Schweinhart et al., 1985: 34). This, too, was the purpose of early childhood programs.

What educators needed to agree upon were: 1) what constituted a

high-quality program, 2) what positive and negative effects arose from intervention, and 3) how could program gains be maintained. This paper examined some of these issues.

STATEMENT OF THE PROBLEM

Some early childhood professionals believed that early cognitive intervention was beneficial for young children. This was especially true of the "at-risk" child or the underprivileged child because these students seemed to gain the most academically and socially from high-quality early childhood intervention programs (McCormick 1986).

Other educators thought that by exposing our children to academics, we were stripping them of their childhood rights (Zigler, 1986), putting them under too much pressure, producing bad attitudes toward future schooling and most of all, wasting our time teaching academics to children who cannot learn because they have not reached their proper developmental level (Elkind, 1986).

Based on this information, selected early childhood education program elements were analyzed to discover their effects on academic and social development.

PURPOSE OF THE STUDY

In our current society the increasing number of mothers entering the work force, the increasing existence of single parent families, and the rising desire of parents for their children's earlier exposure to academics has promoted the need for quality early childhood programs. Due to this increased demand for preschool and day care programs, educators were faced with the delemma of what constituted a high-quality program. Therefore, the real need existed to substantiate what advantages and disadvantages were acquired from

participation in an early childhood program and just who benefited most.

ORGANIZATION OF THE STUDY

The main focus of this paper was to review the research applicable to various early education programs and determine if these elements produced any viable academic or social effects.

The annotations reviewed were broken-down into two main sections: 1) the academic outcomes as influenced through participation in various approaches of early childhood educational programs and, 2) the social effects as determined through participation in early childhood educational programs. In the first section dealing with academic outcomes, the research surveyed dealt with four common elements apparent in early childhood programs. The four factors probed in reference to their influence on academics were labeled 1) home intervention outcomes, 2) preschool intervention outcomes, 3) the length-of-day time factor in kindergarten programs and resulting effects, and 4) the socioeconomic status of children enrolled in early childhood education programs and its influence on academic achievement.

The second portion of the literature scrutinized considered the participant's social behaviors as influenced through enrollment in early childhood programs. The observed social effects noted in the annotations were acknowledged strengths and weaknesses. Each of these annotated section was then organized in alphabetical order.

The final part of this paper consisted of an analyzed summary of the annotations, the general conclusions drawn from the data, and the suggested recommendations.

LIMITATIONS OF THE STUDY

Several limitations were recognized as the review of the research progressed. Such research elements as small sample size and the lack of consistent measures were obvious drawbacks. Zigler and Trickett criticized the chronic usage of IQ tests and professed the need to adopt new social competence measures in order to render more accurate results (Zigler and Trickett, 1978).

Still another limitation mentioned was the fear expressed by Schweinhart et al. that "...a child may be erroneously labeled as marginal very early in life" just from participation in early preschool programs (Schweinhart et al., 1985:34).

DEFINITION OF TERMS

achievement, academic -- knowledge attained or skills developed in the school subjects, usually designated by test scores or by marks assigned by teachers, or both. (Good 1973:7)

aggression -- used synonymously with aggressiveness.

aggressiveness -- hostile behavior directed toward hurting another individual. (Good 1973:22)

at-risk students -- children who lived in families of low socioeconomic status and who, according to test scores, were at risk of failing in school. (Schweinhart, Weikart and Larner 1986:17)

child-centered approach -- a curriculum model in which the child initiates and the teacher responds. (Schweinhart, Weikart and Larner 1986:18)

cognitive ability -- used synonymously with cognitive intelligence.

cogintive development -- the individual's active process of constructing the methods and contents of human thought through interactions with the physical and social environments. (Schwebel 1985:156)

cognitive stimulation -- the provision of opportunities for developmentally appropriate experiences which enhance cognitive performance. (Schweinhart and Weikart 1980:9)

commitment to schooling -- motivation and time spent on task and the desire to achieve in continued schooling. (Schweinhart and Weikart 1980:11)

curriculum model -- theoretical approaches to preschool program structure. (Schweinhart, Weikart and Larner 1986:17)

day care center -- a community or neighborhood center, staffed by professional child care workers. (Goodman and Andrews 1981:271)

development, emotional -- the process of psychic evolution that in the mature individual has progressed from infantile dependence to the capacity for assuming adult responsibility and forming adult love relationships. (Good 1973:176)

development, social -- the pattern of change through the years exhibited by the individual as a result of his interaction with such forces as people, social institutions, social customs, and social organizations. (Good 1973:177)

direct-instruction -- used interchangeably with direct-structure and programmed-learning approach.

direct-structure -- used interchangeably with direct-instruction and programmed-learning approach.

early childhood education -- usually refers to the program and curriculum for children in nursery school, kindergarten, and/or the primary grades one through three. (Good 1973:200)

extended-day kindergarten -- usually patterned after the traditional half-day program but consists of an additional 60-90 minutes of classroom time. (Cruikshank 1986:28)

exurban -- this is a term used to classify a group of properties whose characteristics lie between rural and suburban. (Cleminshaw and Guidubaldi 1979:94)

family day care -- a local mother provides care for a limited number of children in her own home. (Goodman and Andrews 1981:271)

full-day kindergarten -- programs consisting of 300 to 360 minutes of instructional time based on a curriculum similar to the half-day program. (Cleminshaw and Guidubaldi 1979:94)

grade retention -- retained in grade (held back). (Darlington et al. 1980:203)

half-day kindergarten -- traditional programs consisting of 150 to 180 minutes of instructional time. (Cleminshaw and Guidubaldi 1979:94)

high-quality program -- a preschool program that has demonstrated long-term effectiveness. (Schweinhart, Weikart and Larner 1986:16)

home intervention -- programs concentrated on home visits to teach mothers how to be more effective teachers of their infants and toddlers. (Darlington et al. 1980:202)

intelligence, cognitive -- that mental functioning involved in perceiving, knowing, and understanding; sometimes measured through the use of problems involving relationships; sometimes restricted to performance in perceptual tasks. (Good 1973:310)

intervention -- any action on the part of an organism that serves to change the relative position of the objects or forces of the environment and of the organism itself, thus bringing new stimuli to bear upon the organism. (Good 1973:314)

kindergarten -- an educational setup or section of a school system, devoted to the education of small children, usually from four to six years of age; characterized by organized play activities having educational, socializing values, by opportunities for self-expression and training in how to work and live together harmoniously, and by an environment, materials, curriculum, and program carefully selected to provide for child growth and development. (Good 1973:324)

open-classroom -- used synonymously with open-framework approach.

open-framework approach -- a curriculum model in which teacher and child both plan and initiate activities and actively work together; activities usually revolve around key experiences. (Schweinhart, Weikart and Larner 1986:18)

preschool education -- the method and theory of guiding young children in a group, generally referring to education demonstrated in nursery schools; emphasis is placed on developing capacities of the individual and on helping him to meet his problems. (Good 1973:435)

programmed-learning approach -- a curriculum model in which the teacher initiates activities and the child responds to them. (Schweinhart, Weikart and Larner 1986: 18)

school achievement -- obtaining success at learning to read, write, speak, and complete mathematic computations for appropriate grade level. (Schweinhart and Weikart 1980:11)

social competence -- should include such aspects as physical health and well-being, cognitive ability index, an achievement measure, social-behavioral indexes, and measures of motivational and emotional attributes. (Zigler and Seitz 1980:357)

special education -- classes for children diagnosed as educable or trainable mentally retarded, learning-disabled, or emotionally disturbed. (Darlington et al. 1980:203)

traditional -- used synonymously with child-centered approach.

transactional approach -- a trait viewed as a dynamic relationship between genetic material and environmental opportunities. (Schweinhart et al. 1985:27)

ANNOTATIONS

ACADEMIC OUTCOMES AS INFLUENCED THROUGH PARTICIPATION IN VARIOUS APPROACHES OF EARLY CHILDHOOD EDUCATIONAL PROGRAMS

HOME INTERVENTION OUTCOMES

Goodman, Norman., and Joseph Andrews. "Cognitive Development of Children in Family and Group Day Care." American Journal of Orthopsychiatry 51.2 (1981): 271-284.

In this study, children between 2½ and 4 years of age were assigned to either licensed family care or day care centers. The 52 children in the family care group were divided into three programs: 1) a high-structured program which was based on the Bereiter-Engelmann approach 2) a moderate-structured program which was based on Levenstein's design, and 3) a low-structured program which consisted of a control group in which the children received friendly interactions but no structured intervention. Actual intervention covered a ten-month time period in which a "teacher", a trained parent, would visit the home and work with the child for one hour twice-a-week. In other homes the "teacher" would follow this same routine but the day care mother would also work with the child for two one hour sessions repeating the lessons presented by the "teacher".

Cognitive performance was measured utilizing various tests. All groups, including the 68 children placed in the three day care centers, were pretested and posttested.

The results were broken into two parts. In the first part, the two experimental family care groups were compared and determined to have made significant IQ gains and achieved higher cognitive performance than could be attributed to maturation. However, no significant differences could be attributed to either experimental group. In the second part, the experimental family care groups were combined and compared to the scores of the control family care group and the combined day care center group. The results indicated that although the sample groups were small, the overall performance of the experimental family care group was significantly better on the majority of the tests and subtests than either the control family care or the day care center participants.

Guinagh, Barry J., Patricia P. Olmsted, and Ira J. Gordon. "The Florida Parent-Infant Education Program." Educational Resource Information Center. 1975 (ED 111 497).

In the home-oriented intervention approach "paraprofessionals" visited the experimental homes of three-month to three-year-old children once-a-week. At age three, the treatment children were organized into groups of five and attended participants homes twice-a-week for two hours.

Follow-up testing was done on the experimental and the control groups at ages four, five and six. The data reported here were from the results obtained at six using three seperate tests. However, actual conclusions were based on only one of those test measures. The authors revealed that all treatment groups scored significantly higher than the control group three years after the intervention was terminated and in some instances four. The examined variables of length of time and order of time indicated that the most effective results occurred from the consecutive three year participants while second year of life results proved ineffective.

Finally, the authors stated that benefits gained from this intervention program should not necessarily be attributed to program design but to changed maternal attitudes. They also expressed the need for further research, especially research involving all social-classes not just low socioeconomic class.

Levenstein, Phyllis. "Third Grade Effects of the Mother-Child Home Program. Developmental Continuity Consortium Follow-Up Study. Final Report." Educational Resources Information Center. 1978 (ED 156 361).

In this follow-up study on the Verbal Interaction Project (VIP) participants, Levenstein found 79% of the original children and administered IQ tests, achievement tests, and teacher ratings midyear through the grade. The purpose of this study was to determine if the treatment received by the original children in the VIP program (later dubbed the Mother-Child Home Program) had any lasting effects. The experimental sample of 111 low socioeconomic Black or Hispanic children had either 46 or 92 home visits from a "Toy Demonstrator" who would model ideal behavior for the mothers to emulate. These same children were compared with the original control group at third grade and Levenstein found significant achievement differences. The children who had received the greatest portion of program intervention scored significantly higher than the other groups, even comparable to the national norms. Teachers also reported that the experimental group received less special education instruction and that a major portion of them were on grade level. Thus, the author concluded that this home intervention program for two through four-year-olds was beneficial and worthwhile.

PRESCHOOL INTERVENTION OUTCOMES

Evans, Ellis D., and Lee Hillman. "Longitudinal Follow-Up Assessment of Differential Preschool Experience for Low-Income Minority Group Children." Educational Resources Information Center. 1983 (ED 241 161).

This study was designed to determine the long-term gains made by low socioeconomic high school students who had participated in the DISTAR or Head Start preschool programs versus a control group having no preschool experiences.

All of the measures examined provided no differential display of performance either academically or socially. Neither preschool program performed significantly better than the other, and when pooled together as a group, their scores were not significantly higher than those students having no preschool experience. These results led the authors to conclude that more continuity was needed between preschool programs and elementary school programs, attendance patterns needed to be examined and established, and parental involvement needed to be encouraged.

Limitations of the study, as cited by Evans and Hillman, were the lack of attendance record information and the inconsistency of the number of original achievement records located.

"The Impact of Head Start: An Evaluation of the Effects of Head Start on Children's Cognitive and Affective Development." Educational Resources Information Center. 1969 (ED 036 321).

In 1969 the Westinghouse Learning Corporation reported the psychological and intellectual impact of Head Start. The report did not examine the physical or nutritional aspects of the program or the children's attitudinal changes. The study was conducted on summer and full-year Head Start participants in comparison to non-Head Start participants through third grade.

The measures utilized were well known, high-quality intelligence and achievement tests, self-concept surveys, teacher ratings on achievement and motivation, and interviews.

The conclusions drawn form the data revealed that summer programs were ineffective. However, the component scores for full-year participants indicated a short-term advantage over their non-Head Start counterparts. Although no major gains were made in the affective domain by full-year participants, slight gains were made in the cognitive domain, however these were not maintained.

The recommendations made were to disband the summer programs and replace them with full-year programs, to continue the full-year programs but increase their effectiveness, and create experimental treatments to be utilized as decision-making tools.

Karnes, Merle B. "The University of Illinois Study of the Differential Effects of Five Preschool Programs." Educational Resources Information Center. 1977 (ED 136 937).

In 1965 a cross-sectional study was begun by Karnes on five early childhood programs. The programs, Traditional Nursery and Community-Integrated, employed a low-structured format. The Montessori program utilized a child-centered but somewhat structured format. The remaining programs, Karnes and Bereiter-Engelmann (B-E), were considered to maintain highly-structured curriculums.

Seventy-five children were finally selected after a screening process which employed such criteria as age, income, family history, no previous preschool participation, and results from the Stanford-Binet Individual Intelligence Test. These variables were then taken into consideration so that formation of each class had an equal mixture of students based on the factors of sex, IQ, and ethnic origin.

Karnes found that, after participation in the preschool programs for one year, the two highly-structured programs had made vast gains over the other three programs and professed a mean IQ gain of 14 points. The author attributed this to the structured curriculum and the programs' emphasis on verbalization.

At the end of the kindergarten year, the B-E group made an additional IQ gain of six points. The other four classes had been enrolled in public school kindergarten with Karnes receiving and additional hour of intervention each day. An achievement test was also administered, which resulted in the Karnes group receiving the highest scores. Karnes found this puzzling considering the high IQ scores achieved by the B-E group.

Karnes continued the study in the first through third grades but only collected data on three of the programs: Traditional Nursery, Karnes, and Bereiter-Engelmann. Utilizing the California Achievement Test, he found that the Karnes and B-E groups scored significantly higher than the Traditional Nursery participants in both reading and math. However, it was determined that no group retained the IQ gains made earlier during their preschool intervention, and in actuality "all groups regressed during the first-grade year" (6). In spite of this regression, Karnes states that the two highly-structured programs would still be beneficial for low-socioeconomic students when compared to the achievement scores made by the Traditional Nursery group. By the end of third grade, the Karnes group scored significantly higher on the achievement tests. Karnes bases his gains on the characteristics implemented in his program of "divergent responses and teaching for transfer" (7).

Lazar, Irving. "Early Intervention Is Effective." Educational Leadership 38 (1981): 303-305.

Early intervention programs were introduced for low socioeconomic students with the hope that outside influences or programs could eradicate or compensate for the disadvantages that these children seem to inherit. The general purpose of every program was to provide an "educational focus," and various programs incorporated several other factors such as health care and parental involvement.

Lazar stated that it was not possible to evaluate the Head Start Program due to a lack of scientific data controls. So he and several other researchers studied fifteen independent experiments which had led up to the creation of Head Start. The purpose was to evaluate students ten years after participation in the experimental program and to determine if the early intervention did indeed affect later school performance.

The conclusions drawn from the research showed that the children enrolled in these programs actually performed on or above grade level, were retained less often, were referred to special education classes less often, and had a smaller percentage of dropouts than the control group. However, Lazar does not attribute these results to any particular curriculum but actually stated that the factors for the students' continued achievement success were due to parental involvement, early age intervention, small child-adult ratios, home visitations, and family health services. Based on these findings, the enrollment in early intervention programs, which employ these components, is encouraged to boost the future academic success of students.

Miller, Louise B., and Rondeall P. Bizzell. "Long-term Effects of Four Preschool Programs: Ninth- and Tenth-Grade Results." Child Development 55 (1984): 1570-1587.

Miller and Bizzell previously did a follow-up study on children in sixth, seventh, and eighth grades who had participated at the age of four in one of four preschool programs, either Bereiter-Engelmann, DARCEE, Montessori, or the University of North Carolina's Traditional program. These programs were all compared with a control group which had no preschool experience.

The data collected from the new study were correlated to the results found in the previous research done at sixth, seventh, and eighth grades. The prevailing trend in the research had been for Montessori males to maintain an increased measured IQ gain over the original prekindergarten testing, and a 15.3 point difference between Montessori males and the lowest group. The Montessori males also seem to consistently score highest on achievement test measures.

Hypotheses posed from the data collected were as follows:

1) Crucial components of the various preschool programs are an integral part of each program and, as of yet, no way has been determined to separate the components.
2) Differences between didactic and nondidactic programs' successes may be based on Piaget's theory since the higher achieving females were enrolled in cognitive programs, whereas the higher achieving males were enrolled in kinesthetic programs.
3) Possible inconsistencies found in Bereiter-Engelmann males' achievement could be due to format differences when moving from a higher didactic preschool to a nondidactic kindergarten format.
4) Continued research is needed to determine the preschool programs' relationships with later school performance and to examine sex differences between programs.

Nieman, Ronald H., and Joseph F. Gastright. "The Long-Term Effects of Title I Preschool and All-Day Kindergarten." Phi Delta Kappan 63.3 (1981): 184-185.

In Cincinnati in 1970, 410 preschool students were enrolled in all-day kindergartens and 141 non-participating preschoolers were enrolled in a half-day kindergarten program. A pretest administered in early fall showed no significant differences between groups. However, after only three months, the administration of a second test provided significantly higher scores for the all-day kindergarteners on three of the four subtests ($p<.001$).

Follow-up testing was done on these same students at fourth and eighth grades. Results again indicated that all-day kindergarten program students still scored significantly higher than the control group. Another observation made at this time was the percentage of special education placements and the number of grade retentions made between these two groups. These results demonstrated that the all-day kindergarten participants once again had the advantage over the half-day control group.

Nieman and Gastright concluded that the all-day kindergarten students actually had and maintained a significant academic advantage over the half-day control group. However, declining scores were prevalent as age increased.

Osterlind, Steven J. "Preschool Impact on Children: Its Sustaining Effects Into Kindergarten." Educational Research Quarterly 5 (Winter 1980-81): 21-30.

Osterlind examined three groups of students at the end of kindergarten to determine the effects that preschool participation had on academic and social performance. The two treatment groups were the California State Preschool Program and the Children's Center Preschool Program. The third group was a control group with no preschool experience.

Testing was completed over the course of the kindergarten year utilizing such instruments as the Comprehensive Test of Basic Skills, Analysis of Readiness Skills, Academic Potential Index, Social and Emotional Maturity Index, Pupil Behavior Inventory, Ypsilanti Rating Scale, Home Environment Scale, and interviews. These data were collected and compared.

The results indicted that the State Preschool Program participants obtained the highest scores of the three groups participating in the areas of reading, overall achievement, and social-emotional adjustments. Osterlind also noted that the absence of any significant differences between programs in the math area called for further research.

In conclusion, the author affirmed that preschool participation did make a difference, particularly the State Preschool Program. While Osterlind admitted that the study was limited in scope and was leery of making generalizations, he still favored the implementation of the State Preschool Program curriculum.

Pierson, Donald E., Deborah K. Walker, and Terrence Tivnan. "A School-Based Program from Infancy to Kindergarten for Children and Their Parents." The Personnel and Guidance Journal 62 (1984): 448-455.

The authors of this article examined the Brookline Early Education Project (BEEP) from creation to conclusion. The purpose of the study was to determine three key elements:

1) Should early childhood intervention programs be a part of the school system?
2) Could any gains made be maintained through continued education in the school system?
3) What were the components that created an effective program?

The research involved in this project was based on 285 children born between the spring of 1973 and the fall of 1974. These children went through a specified program which ceased at the age of five, but the study of these children ran until the youngsters had completed second grade. In the end, 60% of the previously enrolled children remained in the study.

The acutal program consisted of parental education, health monitoring, and a specific early childhood program. The specific educational program consisted of children who were participants in a socialization playgroup at the age of two. The ages of three and four saw these same students placed into prekindergarten programs which utilized a loose instructional program. The final program was the actual introduction to kindergarten.

The results between the children enrolled in BEEP and the control group were as follows:

1) Difficulty in classroom learning behaviors and socialization skills were: BEEP students 14.2% - Control Group 28.4%.
2) Difficulty in reading performance toward the end of second grade were: BEEP students 19.3% - Control Group 32.5%.

The conclusions drawn from these results were two-fold. First, school-based early intervention programs were influential in later school performance; and secondly, parental education and support were determining factors in students' academic success.

Schweinhart, L.J., and D.P. Weikart. Young Children Grow Up: The Effects of the Perry Preschool Program on Youths Through Age 15. Ypsilanti: High/Scope, 1980.

The original Perry Preschool Project ran between 1962-67. The program consisted of low socioeconomic black children with an IQ between the 70-85 range whose parents had a median education of ninth grade. The three- and four-year-olds who fit these criteria were then randomly assigned to an experimental or a control group with the exception of later siblings who were placed in the same programs as the child who preceded them. The total sample consisted of 123 children with 58 of these residing in the experimental group and the other 65 assigned to the control group. The experimental children went through the program in five waves with two waves occurring the first year and a single wave occurring each consecutive year.

The intervention program consisted of 12½ hours per week of child-teacher initiated cognitive stimulation based on a set of key experiences. The program also incorporated 1½ hours per week of home visitations.

This new study continued to examine and report the effects of the preschool program on the original participants at age 14. The long-term results were based on IQ and achievement tests administered at age 14, on parental interviews, on participant interviews, on annual IQ tests administered from age three through age ten, on child-rating scales completed by teachers, and on examination of school records.

From the data collected Schweinhart and Weikart concluded that actual IQ gains made from the preschool program were not long-lasting due to the effects of economic depression and less stimulating elementary classrooms. However, cognitive ability was affected as determined by improved school achievement and achievement test scores of the experimental group through age 14. Noted by the authors were the fewer special education placements and grade retentions by the experimental group.

Of no less importance were the social adaptations made by the preschool participants. The experimental group exemplified a better attitude toward school, aspired to go to college, and demonstrated task persistence. Also, as determined from their interviews, 43% of the experimental group had not demonstrated any major delinquent behaviors in comparison to 25% of the control group. In addition, only 36% of the preschool participants were chronic offenders versus 52% of the control group.

Stevens, Joseph H., "Research in Review: From 3 to 20: The Early Training Project." Young Children 37 (Sept. 1982): 57-64.

Stevens examined participants from the Early Training Project (ETP). The ETP's purpose was to strengthen cognitive and affective development.

The results analyzed at the end of preschool demonstrated that the experimental groups had achieved higher IQ scores than the control groups. These results carried over through the fourth grade. Some achievement gains were made but were not maintained through fourth grade. The long-term results scrutinized indicated no significant differences between the experimental or control groups in reference to IQ or achievement test scores. However, the experimental girls actually demonstrated better general social and academic adjustment.

The outcomes from this study equated ETP participation and early positive academic gains. Therefore, Stevens suggested that low-income students through participation in some type of intervention program were more likly to demonstrate satisfactory academic achievement.

Zigler, Edward., and Penelope K. Trickett. "IQ, Social Competence, and Evaluation of Early Childhood Intervention Programs." American Psychologist 33 (1978): 789-797.

In this article Zigler and Trickett assessed the chronic usage of IQ tests as the main measure used to weigh the worth of an early childhood program. After citing various pitfalls that the IQ measure produced when employed as a determinant measure for the preschool programs, the authors explored the adoption of social competence measures. Here the definition was unclear, but social competence measures to be employed were: physical health measures, cognitive ability measures (included IQ or Piagetian), achievement measures, and motivational measures.

The authors emphasized the urgent need to employ the social competence measures for early childhood programs so that we have the proper tools on which to base accurate judgments of program success.

THE LENGTH-OF-DAY TIME FACTOR IN KINDERGARTEN PROGRAMS AND RESULTING EFFECTS

Adcock, Eugene P., Judith M. Hess, and Elayne R. Mitchell. "A Comparison of Half-Day and Full-Day Kindergarten Classes on Academic Achievement." Educational Resources Information Center. 1980 (ED 194 205).

This study dealt with academic effects determined through the participation of five-year-old students in full-day or half-day kindergarten programs. One hundred eighty-nine kindergarten students from urban and rural localities in Maryland participated in this study. The control group consisted of 58 children enrolled in half-day kindergartens which lasted two and one-half hours each day. The experimental group was composed of 131 students enrolled in full-day kindergartens which employed a six hour school day. There was no difference in the half-day or full-day curriculum which meant that this study utilized the length of day as the independent variable and academic achievement was the dependent variable.

The control and the experimental students were pretested in the fall of 1978 and posttested in the spring of 1979 using a battery of the Metropolitan Achievement Test.

The results of this study were based on the data collected from those students who had participated in both the pretesting and posttesting. Therefore, the significantly higher achievement scores obtained by the full-day kindergarten students in all content areas measured by the test battery were attributed to the length-of-day. These results led the authors to the conclusion that the full-day kindergarten programs promoted higher academic achievement in comparison to the half-day program. Based on the comparison of the test scores, they advocated the implementation of the full-day program because the additional time proved beneficial in mastering skills.

Anderson, Eleanor. "Increasing School Effectiveness: The Full-Day Kindergarten." Educational Resources Information Center. 1983 (ED 248 036).

In this study Anderson described an extended-day kindergarten program which was implemented in California in the 1982-83 school year. The pilot project compared a sample of 60 students enrolled in two district schools utilizing a kindergarten instructional block of time consisting of 270 minutes. The comparison half-day participants were from two other district schools and were given 180 minutes of instruction. An important point made here by Anderson was that the comparison sample employed controlled variables such as: age, entry-level scores, socioeconomic status, and boy/girl ratio. On the other hand, the experimental groups used two methods. One school employed a random assignment of students while the other school selectively chose students who had done well on initial developmental tests administered prior to kindergarten entry. The author cautioned that this selection procedure would have a definite influence on the results which were obtained.

The actual curriculum employed by the full-day and half-day programs were identical with the exception of additional time. The extra time was allotted to all content areas except indoor activities and rest time, with the largest block of time being allocated to the reading/language area.

The tools utilized to measure results were the Stanford Early School Achievement Test, parent questionnaires, and teacher interviews and observations of students. These data were gathered and compiled to form the following academic and social conclusions. The extended-day participants did score higher on the achievement tests, and as predicted, the selective sample students scored highest of all four groups. This verified that the extended-day participants did significantly better than the comparison groups and that "selection criteria" was definitely a factor in the scores obtained.

Additional evidence gained from the other measurement tools employed were that: fatigue was not a factor in full-day programs, no evidence of undue pressure was observed, and the majority of parents preferred the implementation of a full-day program. Social aspects observed were that the full-day participants had more "...self-confidence, independence and cooperation..."(5).

Cleminshaw, Helen K., and John Guidubaldi. "The Effect of Time and Structure on Kindergarten Student Social and Academic Performance." The Journal of Educational Research 73.2 (1979): 92-101.

Cleminshaw and Guidubaldi conducted a study on 96 kindergarten students from Ohio. There were four basic programs: 1) traditional half-day kindergartens, 2) traditional full-day, alternate day kindergartens, 3) open-classroom half-day programs, and 4) open-classroom full-day, alternate day kindergartens. Each program was randomly assigned twenty-four children from an "exurban," low to middle-income class of which half were boys. The traditional programs consisted of a teacher-directed curriculum with little individualization. In contrast, the open-classroom was more student-directed, learning center oriented, and children worked at their own pace.

The results from the four tests administered revealed that the full-day, alternate-day students obtained higher mean scores. These same students also did better on "measures of interest and participation..., while no difference in cooperation and compliance was attributed to either program" (96).

The authors conclude that the children who participated in full-day alternate-day programs actually scored significantly higher on academic measures than those enrolled in the half-day, everyday programs, verifying that time and participation have a definite effect on cognitive gains.

Mc Clinton, Sandra L., and Carolyn Topping. "Extended Day Kindergartens: Are the Effects Intangible?" The Journal of Educational Research 75.1 (1981): 39-40.

In this study Mc Clinton and Topping examined the time factor involved in kindergarten programs and its relationship to academic performance and first grade adjustment.

In one part of the study, eight extended kindergarten day (EKD) classes were compared to eight half-day kindergarten classes with respect to the academic scores achieved on the California Test of Basic Skills. The results obtained from this test at the end of kindergarten and again at the follow-up testing at the end of first grade demonstrated no significant achievement differences by either group. However, in the second part of the study, 40 EKD participants and 40 children from regular classrooms were rated at the end of first grade by their teachers. Teachers were blind as to the type of kindergarten programs in which the students had participated. The teachers rated the students on academic ability and social adjustments. The results from this portion of the study led the authors to conclude that EKD classrooms produced more capable students in the eyes of the teachers, thereby promoting a head start in first grade adjustment.

Nieman, Ronald H. and Joseph F. Gastright. "Preschool Plus All-Day-Kindergarten: The Cumulative Effects of Early Childhood Programs on the Cognitive Growth of Four and Five Year Old Children." Educational Resources Information Center. 1975 (ED 105 998).

According to Nieman and Gastright, the children enrolled in the Title I Early Childhood Project must have scored below the third stanine on the Cooperative Preschool Inventory and must have lived in a Title I school district. The purpose of the program was to bring these children's academic achievement up to the national average for first grade. The programs available were Preschool, Half-Day-Kindergarten, All-Day-Kindergarten, and All-Day-Kindergarten and Preschool. Therefore, the main variable was the time factor.

The results showed that children enrolled in the Title I Early Childhood Project for Preschool scored significantly higher on the Boehm Test of Basic Concepts than their non-attending counterparts. The academic achievement scores were even greater at the end of kindergarten and again in the follow-up studies at the end of first and second grades.

Although this was not a "planned research study," the sample was not random, and pretesting was not conducted, the results implicated a positive relationship between program participants and test scores.

Seefeldt, Carol. "Tomorrow's Kindergarten: Pleasure or Pressure?" Principal 64.5 (1985): 12-15.

In the 1960's, the race was on in education and the new theory for preshcool and kindergarten programs that emerged was that the earlier the introduction to academics the better these students would achieve in later schooling.

This theory and the results from a study on the Head Start Program revealed that students previously enrolled in the program more often completed high school, entered college and obtained and held jobs. Also these same program participants were less likely to repeat grades, require remedial education or wind up in jail or on welfare. The results of this research led many states to alter their kindergarten programs and requirements.

Then, too, the idea materialized for full-day kindergarten programs which provided a solution to the need for quality day care and provided additional time in the day for these young students to be exposed to "hard-core learning activities."

Even in the half-day programs, more workbooks and writing activities were incorporated into the curriculum and less time was attributed to socialization and free-play.

Seefeldt stated that young children learned best by actively working on their environment and not by completing worksheets and dittos. This meant that more time should be devoted to the traditional types of pre-school programs and less time focusing on academics.

THE SOCIOECONOMIC STATUS OF CHILDREN ENROLLED IN EARLY CHILDHOOD EDUCATION PROGRAMS AND ITS INFLUENCE ON ACADEMIC ACHIEVEMENT

Darlington, Richard B., et al. "Preschool Programs and Later School Competence of Children from Low-Income Families." Science 208 (1980): 202-204.

In this study the authors examined eight preschool intervention programs which employed various methods such as: Montessori, Bereiter-Engelmann, Piagetian theory model, Bank Street model, and others. These programs were used for low-income, predominantly black families, whose parents had little formal education. The follow-up data collected on these participants were intelligence test scores, school records, school achievement test scores, parental interviews, and participant interviews. The program participants were never combined into one sample group and were always compared with the original control groups. However, results were pooled by using the $\underline{z}$ technique.

The long-term results of this study were based on 74% of the original participants. The loss occurred was due to random attrition which produced no effect on the follow-up results. The authors found that IQ trends, after program intervention, were higher. Three to four years after preschool they tended to taper down and vanished after that. They suggested that if one year of intervention can last up to four years, then twelve years of enriched school programs should produce improved lifelong results. It was concluded that the low-income preschool participants definitely had a lower percentage of grade retentions and a lower percentage of special education placements than the non-preschool control group.

Gersten, Russell. "Response to 'Consequences of Three Preschool Curriculum Models Through Age 15'." Early Childhood Research Quarterly 1.3 (1986): 293-301.

In this article Gersten reevaluated the original study conducted by Schweinhart, Weikart, and Larner (1986). He found numerous discrepancies beginning with the terminology of the direct-instruction group referred to as DISTAR. In actuality the children labeled as DISTAR participants received only four months of that curriculum; prior to that they had received a language program. Other limitations noted by Gersten were the small sample size, the need for further research, and the lack of achievement test administration at age 15.

Other problems revealed here in relation to the direct-instruction group were: 1) the greater percentage of boys enrolled in this program may have biased the social adjustment results, and 2) the highest percentage of single-parent homes and of working mothers may also have affected social behavior.

Still another problem noted by Gersten was the percentage of direct-instruction and nursery school participants who were enrolled for two years versus the entire High/Scope population which received two years of intervention. He also criticized the measurement tools employed in the study, the lack of achievement testing administered after fourth grade, and the need for unbiased evaluators to review the study.

Gersten also questioned the original studies statement of IQ equality for all three curriculum models when "...the direct-instruction group mean was over one-third of a standard deviation higher" (299). He went on to explain that this could be considered a significant difference but was not reported as one.

Gray, Susan W., and Rupert A. Klaus. "The Early Training Project: A Seventh-Year Report." Child Development 41 (1970): 909-924.

Gray and Klaus reported on an early intervention project instituted in 1962 and labeled the Early Training Project. It consisted of 88 black children from poverty backgrounds placed into one of four groups. There were two treatment groups: one which ran for three years of intervention and one which ran for two years. There were also two control groups: one local and one distal control group located 65 miles away. All four groups were pretested and posttested each summer.

The results from the test measures indicated that the two experimental groups scored significantly higher than either of the control groups. At the same time, the lowest scores obtained were by the distal control groups insinuating that "spillover" occurred and that intervention was effective. However, the gains were not maintained and the scores actually declined over the years.

The conclusions drawn from the data were that if slight gains were made from such a small dose of intervention, then low socioeconomic children would benefit even more from a high-quality expanded program.

Hebbeler, Kathleen M. "Follow-Up Study of Three Cohorts of Head Start Graduates." Educational Resources Information Center. 1985 (ED 263 977).

Hebbeler examined the long-term data collected from school records and a computer data base on three Head Start Cohorts and a comparison control group.

The outcomes presented for the twelfth grade participants demonstrated higher significant measures in all areas when compared to the control group. The evidence examined for both the eighth grade and fourth grade groups designated weaker gains. The fourth grade examination produced higher scores than the control group, but these were not of statistically significant value.

In the second part of the study, the Head Start group was paralleled with other middle-class socioeconomic students' school performance. The overall Head Start participants' performance, when compared with these students, was poor. Head Start students demonstrated low-scale performance, had more grade retentions, more special education placements, were below average, and were considered to have serious problems.

The final assumptions made were that Head Start proved to be a profitable endeavor when compared to a like socioeconomic control group. However, when compared to a general student body, the Head Start students performed poorly, thus demonstrating that Head Start participation was beneficial but that it was not a "cure-all."

Irvine, David J. "Evaluation of the New York State Experimental Prekindergarten Program." Educational Resources Information Center. 1982 (ED 217 980).

New York State began a prekindergarten program for three- and four-year-old, low socioeconomic children in 1975. The program components consisted of school experiences, health services, social services, and parental involvement. The program structure was a moderately open-framework which was both teacher- and student-directed.

A comparison was made between the control groups, who were on a waiting list to be enrolled in the preschool program, and the prekindergarten participants. The data used for the comparisons were various IQ tests, achievement tests, social behavior ratings, and school records. The data were collected through third grade.

The results from the data indicated that prekindergarten improved cognitive performance and developed positive social adjustment. Irvine stated that other benefits found were lower percentages of grade retentions and special education placements by preschool participants. It was also noted that the only program element which proved beneficial in the prekindergarten program structure was parental involvement. Irvine concluded that preschool programs were beneficial to the "at-risk" child from low-income families.

Lazar, Irving. "Discussion and Implications of the Findings." As the Twig is Bent...Lasting Effects of Preschool Program. The Consortium for Longitudinal Studies. New Jersey: Lawrence Erlbaum Associates, 1983. 461-466.

In this chapter Lazar reported the results and implications for the pooled analyses on eleven long-term projects. The overall findings revealed for preschool participants were: 1) IQ scores increased and were maintained for three to four years, 2) throughout elementary school reading and math achievement scores were higher than control groups, 3) special education and grade retention were lower while high school graduates were more numerous, and 4) participants had higher self-esteem, valued achievement more, and had increased parental expectations and individual occupational aspirations.

The conclusions drawn from all the data were that no one program was best but that high-quality, professionally supervised programs for poor minority children were effectual and should be continued. These high-quality programs paid for themselves through the reduction of special education classes and social service needs. Lazar also stated "...that the search for the 'perfect' curriculum [was] probably futile" (464) since no one program was discerned as being the best. Finally, it was affirmed that preschool participation helped to alleviate the effects of poverty on children's social and cognitive development.

Palmer, Francis H. "The Effects of Early Childhood Intervention." Educational Resources Information Center. 1977 (ED 143 427).

Based on the research conducted by Palmer, 310 boys from various social-classes were randomly assigned to program groups for the Harlem study. Intervention lasted for eight months employing individualized instruction for one hour twice-a-week. This program was provided for a group of two-year-olds the first year, a separate group of three-year-olds the second year, and a final group of four-year-olds the third year.

In the first year of study, the experimental group scored significantly higher than the control group, but no difference was found in the performance of middle-class or low socioeconomic students. In the second year, the three-year-olds scored significantly higher than the controls. The two-year-olds, who were reassessed, maintained their superiority over the controls, and middle-class participants had a slight edge over the lower socioeconomic students but nothing significant. In the final year, it was determined that previously noted differences were vanishing between control children and treatment children. Palmer also mentioned that differences in social-class performances were now noticeable but no explanation was presented. A follow-up study was conducted in 1975, the new information confirmed the original results. The experimental boys had higher reading achievement scores, higher arithmetic achievement scores, higher mean IQ scores, and less grade retentions. No follow-up information was provided for social-class difference. Palmer completed his analysis by stating that early intervention was effective even in these small doses.

Pinkett, Kathleen E.L. "Preschool Attendance and Type of Experience in Advantaged Children: Long-Term Effects by Third Grade." Educational Resources Information Center. 1985 (ED 265 942).

Pinkett evaluated 226 "advantaged" third grade students who had been enrolled in either full-day or half-day preschools. These middle-class students were assessed on social competence, cognitive ability, reading achievement, and math achievement. These tools were utilized to determine how preschool affected "advantaged" students and to discern the benefits of full- versus half-day programs.

The results demonstrated by the "advantaged" students established no performance differences between preschool and non-preschool participants. At the same time, the outcome revealed that half-day students had higher cognitive ability and higher social competency skills in comparison to full-day children.

The implications drawn from the analyzed data were that middle-class children tended to have IQ gains that diminished over time. Other findings gave no evidence that preschool had any adverse effects on its participants. However, Pinkett stated that full-day children tended to demonstrate more fatigue which led to more aggressive behaviors. Her closing statement was the plea for further research on the "advantaged" student populace.

Rickel, Annette U., and Louise Lampi. "A Two-Year Follow-Up Study of a Preventive Mental Health Program for Preschoolers." Journal of Abnormal Child Psychology 9.4 (1981): 455-464.

Rickel's and Lampi's purpose for this study was to examine the high-risk children who had participated in an experimental program called Preschool Mental Health Project. They focused on whether the academic and behavioral gains made by the experimental group over the control group were sustained over time.

The study took place in Detroit and was based on the comparisons of data for three groups of students: 1) a high-risk experimental treatment group, 2) a high-risk control group, and 3) a low-risk "normal" group.

The measurements employed were social/behavioral tests and an achievement test. These results noted aggressive and shy behavior for the high-risk group.

The results obtained were favorable for the high-risk treatment students. It was found that there were no significant differences between the high-risk treatment group and the low-risk control group. It was also found that there were significant differences between the high-risk placebo group and the low-risk control group.

In closing, the authors stated that preschool participation was indeed beneficial and that high-risk shy treatment children made the greatest enduring gains both academically and behaviorally.

Schweinhart, Lawrence J., David P. Weikart, and Mary B. Larner. "Consequences of Three Preschool Curriculum Models Through Age 15." Early childhood Research Quarterly 1.1 (1986): 15-45.

The authors analyzed data collected for three preschool curriculum models: High/Scope, DISTAR, and nursery school, and for a comparison control group, when their participants had reached the age of 15. In the original sample the children had to live in Ypsilanti, Michigan, be three-years-old between 1967 and 1969, and be considered an at-risk child. For this study all three programs consisted of actual classroom sessions and at-home visitations.

The measurement tools used to make the comparisons between groups were general aptitude tests, achievement tests, a social competence survey, and personal surveys and interviews.

From the data collected it was discovered that the IQ gains made by the preschool groups diminished over time but the students still maintained approximately a ten-point advantage at fourth grade over the control group. It was also noted that the three curriculum models made and maintained comparative achievement gains. However, in the area of social adjustment, the DISTAR group was considered to fall short. These results tentatively led the authors to conclude that high-quality programs should consist of open-framework or child-initiated curriculum models and not the direct-instruction model.

Although assigned to programs randomly, a limitation to this study was the fact that the nursery school group consisted of less blacks with higher parental education and higher socioeconomic status than the other groups. Other limitations were the small sample sizes and the use of generalizations in reference to individual models.

Zigler, Edward., et al. "Is an Intervention Program Necessary in Order to Improve Economically Disadvantaged Children's IQ Scores?" Child Development 53 (1982): 340-348.

The usual tool utilized to measure the worth of an early childhood program's success has been an IQ test. The purpose of this study was to determine if IQ gains were based on program intervention or on learned retesting skills.

The study took place in Connecticut and was conducted by utilizing 84 poverty-level children. Fifty-nine were placed into Head Start programs and twenty-five children were not enrolled into any form of a preschool program.

Pretest, retest, and posttest schedules were conducted at the same time intervals for both the experimental and the control groups. The findings reported from these tests signified that the Head Start participant's scores constantly improved while the non-Head Start student's scores increased from pretest to retest but declined thereafter.

The authors suggested that the IQ changes discerned might actually be the consequence of motivational factors "...of real changes in the quality of the child's intellectual functioning" (346). Whether this statement was true or not, they considered Head Start to be a valuable asset for low socioeconomic children and strongly urged follow-up research to be undertaken in the area of test measures.

SOCIAL EFFECTS AS DETERMINED THROUGH PARTICIPATION IN EARLY CHILDHOOD EDUCATIONAL PROGRAMS

ACKNOWLEDGED STRENGTHS

Finkelstein, Neal W. "Aggression: Is It Stimulated by Day Care?" Young Children 37 (Sept. 1982): 3-9.

In an earlier study conducted by Finkelstein in 1979, the Carolina Abecedarian Project was found to be producing kindergarten students who exhibited excessive aggressive and hostile behaviors. This study was initiated in response to those findings.

In the summer before kindergarten, a group of Abecedarian participants were observed playing outside for fifteen minutes each day. They were observed again the fall after enrollment in kindergarten. The observations indicated that the preschool participants were definitely more aggressive than their non-preschool counterparts. In answer to this aggression, a prosocial curriculum was implemented. Students were again observed during outside free play. It was discovered that the students who had participated in the new prosocial curriculum, when compared to day care peers not participating, obtained lower aggression scores. Finkelstein reported that the observed aggression had decreased by 90%, and in the follow-up kindergarten study it decreased by 75%. Thus, the author concluded that "...social curriculum intervention within a day care program" was a necessity (8).

"A Longitudinal Study of the Effectiveness of Full-Day Kindergarten." Educational Resources Information Center. 1983 (ED 247 014).

Everyday, full-day kindergarten programs were incorporated into four schools in the Evansville-Vanderburgh School Corporation in 1978. A study of this program conducted by the School Corporation in 1980 showed that full-day students demonstrated higher academic achievement scores at the end of first grade. This follow-up study was implemented to determine if the program instilled any negative or debilitating effects on the students. Only students enrolled in the same schools as their kindergarten experience were employed for the longitudinal study. The data examined for these students were report cards, standardized tests, questionnaires, and interviews. The results obtained from this data demonstrated higher acceptable social behavior, higher report grades, and less percentage of grade retentions for the full-day students.

From all of the information gathered, the School Board concluded that full-day parents and students had a more positive attitude about their program. Secondly, full-day students were found to excel academically and to display appropriate social behaviors throughout the primary grades. Finally, full-day participation in kindergarten provided lasting beneficial academic and social effects.

Schweinhart, Lawrence J., et al. "Effects of the Perry Preschool Program on Youths Through Age 19: A Summary." Topics in Early Childhood Special Educational Quarterly 5.2 (1985): 26-35.

In this article the authors examined the original participants from the first five waves of the Perry Preschool Project. These 123 youths were 19 years of age and had been enrolled in the transactional approach preschool for one or two years. Periodically over the years, the 58 children in the experimental group have been compared to the 65 children in the control group. This study reported the findings of this comparison at age 19. The data collected were participant interviews, all school records, police and court records, and records on social service usage.

The measurement outcomes were reported for three areas: "scholastic success, socioeconomic success, and social responsibility" (31). Results found in the academic area were that 67% of the experimental participants graduated from high school versus 49% for the control group. The preschool participants were also found more likely to continue their education after high school and these students scored higher on the "functional competence" test administered at age 19. Other benefits for the experimental group were a smaller percentage of special education placements and less grade retentions. In the area of socioeconomics, it was determined that the experimental youths held more jobs and were on welfare less often than the control group. The final area examined was that of socially acceptable behavior. In this area the experimental group had a smaller rate of arrests and the girls had less teenage pregnancies than the control group.

The authors also conducted a "cost-benefit analysis" and, based on both the cost analysis and the program results, concluded "...that investment in the preschool group was a good investment for society" (32).

ACKNOWLEDGED WEAKNESSES

Brophy, Beth., et al. "Children Under Stress." U.S. News and World Report 27 Oct. 1986: 58-63.

This article, although admittedly not a research study, offered some food for thought. The authors pointed out several psychological pressures which the children of the 1980's faced. One of the accused culprits was the area of early childhood education. It was determined that approximately seven million children in the United States were cared for outside the home and that three fourths of those were in family day care homes. It was also reported that 39% of all three- and four-year-olds and over half of the children under six, due to working parents, were enrolled in some form of an early childhood program. From this information the generalization was made that children under three who were enrolled in day care centers were considered to be under much more stress than their at-home counterparts. However, no proof was offered to verify the accusation. Another factor which appeared to be increasing, was the length of time both day care and kindergarten children actually spend enrolled in these programs. The author reported that these factors were reason for concern. Although no obvious conclusions were cited, the need for further research was obvious.

Haskins, Ron. "Public School Aggression Among Children With Varying Day-Care Experience." Child Development 56 (1985): 689-703.

Haskins' proposed study was to determine if day care participants were more aggressive; and if so, what prompted the aggression and how was it manifested. The study sample consisted of 59 children from black, low-education, and low-income families. The children were randomly assigned into an experimental group of 27 students and a control group of 32 students, both approximately half girls. The experimental children were enrolled in day care centers from three-months of age until school entry. A limitation to this study, worth mentioning at this point, was that the control group also had day care experiences but of less duration.

The results were based on teacher ratings and teacher interviews conducted in primary grades. The findings reported for the first year were that no significant differences were found between groups. In the second year, the experimental group was difinitely more aggressive, and in the third year the differences in aggressive behavior declined.

From these results Haskins concluded that: 1) the amount of day care directly affected the increase in the amount of aggressive behavior, 2) the cognitively-structured day care students demonstrated more aggressive behavior, 3) the aggressive behavior differences between the experimental and control groups decreased over time, and 4) due to inconsistent results, more research should be initiated in the social area.

McCoy, Elin. "Where Have All the Children Gone?" Parents 61 (May 1986): 93+.

McCoy stated that "according to the Bureau of the Census 31% of all three- and four-year-olds were enrolled in nursery school in 1983..." (94). Reasons provided for the increasing number of preschool enrollments were out-of-home parental employment and parents' changing viewpoints for the necessity of early academics. These facts were seen as a stress-producing situation since these preschool participants were asked to adapt to group situations earlier and because peer interactions were introduced at earlier ages. The other questionable preschool techniques mentioned here were the use of "rigid timetables" and the amount of cognitive structure incorporated into these programs.

Although no evidence was presented to verify McCoy's statements, the stress factor was noteworthy. Perhaps the lack of research in this area was due to the fact that accurate social-emotional measurement tools were hard to find.

Vlietstra, Alice G. "Full- versus Half-Day Preschool Attendence: Effects in Young Children as Assessed by Teacher Ratings and Behavioral Observations." Child Development 52 (1981): 603-610.

Vlietstra examined the effects of full-day versus half-day participants as measured by observations and teacher ratings. The study was comprised of 17 white students enrolled in the half-day program and 20 students, half black and Oriental and half white, enrolled in the full-day program. All students were from middle-class, two-parent families ranging in age from two and a half to four and a half years. The groups were predominantly boys but in equal proportions for each group. All students participated in a half-day Montessori program. The full-day students then moved on to day care centers for the remainder of the day. The total observations conducted by two observers on these students ranged between 40-65 minutes per child. Teachers also completed ratings for students on such behaviors as cooperation, frustration, aggression, and motor activities. The results were conflicting. The observers concluded that the full-day students spent more time on task, had positive peer interactions, and motor activity. The teachers, on the other hand, rated full-day students as less likely to get along with their fellow classmates, more aggressive, and having a lower frustration level.

There were several flaws in this study, some even admitted by Vlietstra. Teacher opinions may have been biased, results were based on an extremely small sample, more boys than girls participated in the study, and more research needs to be completed.

SUMMARY

In reviewing the research on early childhood education programs, four main factors were examined in reference to their influence on the resulting academic effects. These four factors were: home intervention, preschool intervention, kindergarten programs, and socioeconomic factors.

The first model explored was the home intervention program. The characteristic feature of this program was home visitations made by trained adults. These visits were created in order to educate caregivers on the development of infants and toddlers. In a study conducted by Goodman and Andrews on this program, it was demonstrated that structured, at-home, family care participants had a definite increase in academic achievement. Other researchers also found that academic achievement could be bolstered by minimal home visits. These significant achievement gains were still prevalent even after intervention ceased anywhere from three years up to the third grade (Guinagh, Olmstead, and Gordon, 1975; Levenstein, 1978). Not only were home visitation programs considered beneficial, as demonstrated in the research previously cited, but in another preschool study conducted by Lazar (1981), it was determined that a minimal number of home visitations (when coupled with the preschool program) influenced academic outcomes to an even greater extent. Due to these home visitations, parental attitudes changed and involvement increased. Later, parental involvement was considered a valuable asset to preschool programs and in several studies a determinate factor to participants' academic success (Pierson, Walker, and Tivnan, 1984; Irvine, 1982; Lazar, 1981).

Further research in the area of academic effects as influenced through preschool participation provided inconclusive results. Some researchers, such

as Karnes, found that highly-structured programs produced vast academic gains which were reflected even in later high achievement performance. However, this study also revealed that IQ gains were not retained. Schweinhart and Weikart also added fuel to these findings when their study concluded that IQ gains were not long-term, but that cognitive ability was increased which was evidenced by higher achievement scores. Still others (Osterlind, 1980; Pierson, Walker, and Tivnan, 1984) boasted that preschool programs increased overall achievement and/or reading scores but no mention of IQ gains were ever disclosed.

In contrast to these research findings, Evans and Hillman produced no academic gains from the analyses of their data. Nieman and Gastright (1981) also examined children entering kindergarten and determined no significant differences in academic achievement scores between preschool and non-preschool participants.

Still another long-term study conducted by Miller and Bizzell concluded that only Montessori males, out of a comparison of four different program curriculums, maintained achievement gains through the tenth grade. All of the research examined gave credence to the fact that preschool programs tended to influence academic achievement but positive results were not always an absolute.

The need for kindergarten attendance was never an issue, but the great debate revolved around the length-of-day time factor involved in daily or alternate-day attendance. Surprisingly, in the research reviewed in this area, the majority of the findings pointed to the academic gains achieved by full-day program participants. For instance, Cleminshaw and Guidubaldi found that full-day participants actually scored significantly higher on achievement test measures. To back-up these findings, other researchers have conducted experimental studies comparing full-day and half-day students, resulting again in better academic achievement performance by full-day children (Adcock, Hess,

and Mitchell, 1980; Anderson, 1983). As previously mentioned, Nieman and Gastright (1981) found no preschool achievement gains. However, after only three months of full-day kindergarten enrollment, these same students demonstrated higher academic achievement gains which were maintained through the eighth grade. The only study examined here which actually demonstrated no significant achievement differences for either full-day or half-day students was conducted by McClinton and Topping; and even though no achievement gains were apparent, teachers interviewed felt that the full-day students were better prepared and adjusted more readily to first grade activities. Although not undisputed, the trend leaned toward the implementation of full-day kindergarten programs.

Another factor which influenced the academic achievement of early childhood program participants was their socioeconomic status. It was determined through several research studies that participation in preschool programs by low socioeconomic students provided increased cognitive performance, raised IQ scores, and heightened achievement (Irvine, 1982; Lazar, 1983). Zigler et al. also revealed that preschool intervention produced increased IQ gains for the at-risk child and therefore warranted the continued implementation of preschool programs for low socioeconomic students.

Other studies paralleled the gains made by the at-risk students with children from middle-class families. These studies were examined in order to see just how much of a difference increased academic gains made for students in a "normal" school setting. Hebbeler found that Head Start childrens' academic performance was in fact improved. However, when compared to test scores administered to middle-class students, Head Start students once again fell short. On the other hand, Rickel and Lampi found that a high-risk treated group

compared to low-risk, middle-class sample demonstrated no significant differences. Still another study by Palmer disclosed that due to an early intervention program, no significant differences were determined between low socioeconomic students and middle-class students at first grade. By the end of second grade, some slight differences were present and by the end of third grade the results favored the middle-class students.

In research on middle-class children participating in preschool programs versus non-preschool participants, Pinkett conceded that some IQ gains were made which diminished over time; and no significant differences were found regarding achievement. She also expressed the need for further research in this area.

In the area of socioeconomic status, Gray and Klaus pointed-out that children from poverty backgrounds achieved short-term academic gains; but with high-quality programs, these gains could become long-term. This same concept was echoed by three other authorities in the following words: "...high-quality preschool programs for poor children can lead to improvements in their intellectual and scholastic performance" (Schweinhart, Weikart, and Larner, 1986: 41). These words reiterated the belief that early childhood education, particularly for low socioeconomic children, provided effective academic achievement.

Some common factors (noted repeatedly from the literature reviewed) which related to academic effects as influenced through preschool program participation were: curriculum models, special education placements, and grade retentions. In examining the curriculum models, several program structures were considered to be more appropriate or effective. Karnes favored the highly-structured programs while Miller and Bizzell favored kinesthetic programs for males and highly cognitive programs for females. Even though many researchers displayed a preference for a particular curriculum structure, no one curriculum model was

ever confirmed as being the one best program structure in relation to academic gains achieved. As Lazar (1983) stated, the quest "...for the 'perfect' curriculum [was] probably futile" (464). In any case, all of the curriculum models studied made and maintained comparable achievement gains (Schweinhart, Weikart, and Larner, 1986).

The last major academic outcomes attributed to participation in early education programs were the decreased number of special education placements and the smaller number of grade retentions. Several studies reported this phenomenon as an asset to their program (Darlington et al., 1980; Irvine, 1982; Lazar, 1983; Levenstein, 1978). All of these researchers considered the smaller need for special education placements and the greater number of children being promoted at grade level a monumental advantage.

In reviewing thus far, it was proposed that academic achievement could be affected by various elements of early childhood programs such as : home intervention, preschool intervention, kindergarten programs, and socioeconomic factors.

The second part of the research investigated dealt with the acknowledged social strengths and weaknesses as determined through participation in various early childhood education programs.

It was reported by Pierson, Walker, and Tivnan that problem behaviors and social misdeeds were less prevalent for preschool participants than for their nonparticipating counterparts. In another instance, social strengths observed and deemed noteworthy were in the kindergarten study conducted by Anderson. She listed improved social qualities, such as "self-confidence, independence, and cooperation" (5). At the same time, she also cited the absence of stress and fatigue by these full-day students. Schweinhart and Weikart declared that children enrolled in some form of early intervention program exemplified a

better attitude toward school, often planned to go to college, and demonstrated less delinquent behaviors. Additional positive aspects were noted by Schweinhart et al. when preschool participants had reached the age of 19. The positive social effects as demonstrated by these young adults were less welfare recipients, a larger number employed, less arrests recorded, and fewer teenage pregnancies reported. These benefits, although hard to measure, were an optimal advantage.

On the other hand, the characteristics of stress and aggression have been reported as debilitating side effects from early education programs. Actual studies examining the effects of stress on preschool individuals were nonexistent. However, two articles were uncovered and in one, Brophy et al. declared that stress was a direct outcome from day care participation. In the other article, McCoy stated that stress was created when children were forced to conform to group situatuions at an early age. Neither article offered any viable evidence, and further research and accurate measures would enhance these authors' arguments.

Aggression, on the other hand, has been a proven consequence attributed to the enrollment in various early childhood education programs. Haskins accused highly-structured day care programs of being the worst offenders in this area, but he also emphasized the parallel between the increase in aggressive behavior with the duration of preschool attendance. Surprisingly, Haskins appeared to contradict these statements when he revealed that aggressive behaviors were not considered a problem in the first grade, were definitely a problem with the second year, and by the third grade the aggressive behaviors were on the decline. In the study conducted by Finkelstein, aggression again appeared as a liability, except in this instance, a prosocial curriculum was initiated which in turn eradicated the inappropriate aggressive behaviors.

One common thread which seemed to run throughout the research evaluated,

both in the social and academic areas, was the need for further research. This valid request was issued by several researchers in the hope of finding more conclusive evidence in areas of social adjustment, middle-class academic outcomes, and social competence measurement tools (Haskins, 1985; Pinkett, 1985; Zigler et al., 1982).

The social aspects examined chiefly revolved around suggested strengths and weaknesses. Much of the research reported was inconclusive and/or produced inconsistent results. These unanswered questions verified the viable need for further research.

CONCLUSION

After analyzing the researched data, several conclusions were drawn with regard to the effectiveness of various factors of early childhood education programs.

The first factors reviewed were home and preschool intervention programs. The combined results from the canvassed data disclosed that, for the most part, IQ gains were made by program participants but these same IQ gains appeared to diminish over time. However, on the positive side, both achievement test scores and cognitive performance were increased and maintained indicating beneficial long-term gains. There were only two cases presented here where no significant academic gains occurred and, although these hindered a unanimious conclusion, the majority of researchers involved favored the implementation of such early childhood programs. Two other acknowledged academic assets, as determined from these research studies, were less grade retentions and less special education placements.

Another factor investigated was the structure of the programs. Here it was determined that no one curriculum model explored (direct-instruction, open-framework, or traditional) was substantiated as the best program structure.

As mentioned previously, the need for kindergarten attendance was never an issue. However, the length-of-day debate had been an ongoing question for some time. From the literature it was discovered that full-day kindergarten provided, in most cases, advantageous academic gains. Even when these were not present, teacher ratings still designated these students as better prepared for first grade activities. Thus, the research results tended to favor the promotion of full-day kindergarten programs. Therefore, it was

concluded that researchers had verified the viable need for the adoption of full-day kindergarten programs.

The researchers, reviewed in this paper, believed that low socioeconomic participating preschool children, when compared to like counterparts, always fared better on IQ gains and academic achievement scores. However, when these disadvantaged program participants were compared to middle-class average students, in most cases, the treated children's performance was not comparable. These results confirmed that low socioeconomic students, even after intervention, were still in jeopardy. On the other hand, no conclusive results were established in reference to experimental middle-class students. The general consensus arrived at here was the need for further research. Thus, it was ascertained from the literature that early education programs were believed to provide adequate and beneficial academic achievement gains for low socioeconomic students and questionable gains for middle-class children. The following statement summed-up the research in the socioeconomic area: "high-quality early childhood education for disadvantaged children [was] a highly effective way of improving their life chances" (Schweinhart, Weikart, and Larner 1986:16).

The social conclusions drawn from the material presented fell into two main catagories: acknowledged strengths and acknowledged weaknesses.

The acknowledged social strengths detected for early education participants were improved school attitudes and strengthened social skills such as cooperation, self-esteem, and autonomy. As participants matured, new social gains were recognized and acclaimed. The researchers left no doubt that long-term social enrichment had taken place as evidenced by higher career aspirations, lower delinquency rates, less teenage pregnancies, greater gainful employment, and less welfare recipients. These teenagers were

considered to have acquired acceptable social behaviors.

The research done in the area of social weaknesses suggested that stress and aggression were direct results of the participation in early childhood programs. The element of stress, while never actually proven as a liability, does warrant the need for further investigation. It was substantiated, however, that aggression was a debilitating factor occurring from enrollment in day care programs, but an alternative was offered to alleviate the problem. Thus, the implementation of a prosocial curriculum in the preschool program would eliminate the aggression factor and thereby reduce the number of proposed social weaknesses.

The only other remaining criticism directed toward early childhood education, as deduced from the literature, was the need for further research in several areas such as: conducted middle-class studies, determination of consistent and accurate measures for evaluation, and for social strengths and weaknesses, particularly in the area of stress.

RECOMMENDATIONS

Based on the research examined in this paper, the following recommendations have been considered and found appropriate. Therefore, it is recommended that:

1. Children, particularly low socioeconomic children, continue to be enrolled in high-quality early childhood education programs in order to reap the viable academic and social benefits.

2. Parental involvement be implemented as a key element in all of the various early childhood education programs.

3. Full-day kindergarten programs be adopted and utilized in the schedules of all school systems.

4. More research be conducted to determine the effects that early education enrollment has on middle-class socioeconomic children.

5. Further research be carried out in the area of early childhood programs to determine if stress actually plays a role in affecting these children's behavior.

6. A prosocial curriculum be implemented in early childhood education programs in order to alleviate the role of aggression on these children.

7. Further research be initiated in order to find more conducive and accurate measurement tools for determining the gains made by participants enrolled in early childhood education.

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I have always been interested in the field of early childhood education. While fulfilling my Master's program, I have undertaken several early childhood development courses and I have a strong desire to obtain a position in this area. In reviewing this research, I hope to obtain a better understanding of the early childhood curriculum and its impact on the students enrolled in these programs. I also hope to investigate the effects that participation in these programs have on work completed in kindergarten or first grade.